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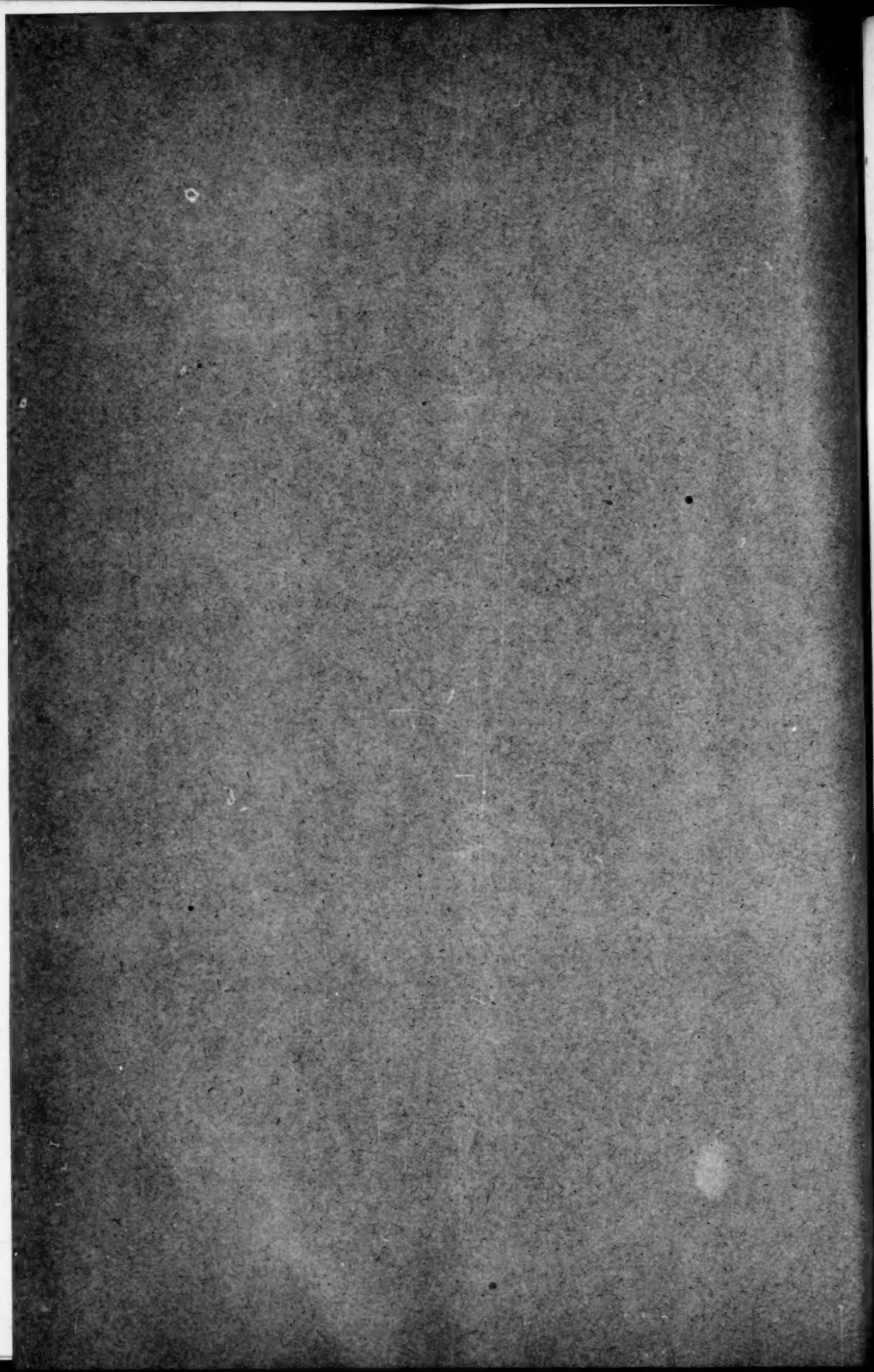

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OPHTHALMOLOGY

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THERAPEUTIC REVIEW.*

Colloidal Cocain.—The favorable results obtained in the search for colloidal preparations of quinin, morphin and cocain in the laboratories of Crookes in London put us to-day in possession of a new preparation of cocain isomere with the colloidal proteins of our tissues.

This collosol cocain is said to have first been tried experimentally on animals by Simpson and Hewlett in the bacteriological laboratories of Guy's Hospital. The results obtained are very interesting concerning its toxicity; in the dosis of 0.05 gramme given by intravenous injection cocain causes the death of a rabbit in a few minutes, while the same dosis of the collosol cocain has never produced any effect. Dr. Tyre studied the anæsthetic properties of this new product.

1. Two drops of a collosol cocain solution (percentage not given) instilled in a rabbit's eye in three minutes produced mydriasis and a complete anæsthesia of the cornea.

2. Two drops of the same solution instilled into the eye of a man produced a complete anæsthesia (in what time?), permitting the removal of a foreign body from the cornea without pain (author's own eye).

3. Less than a cubic centimeter (0.8) of the solution injected into the urethra of a very nervous and sensitive patient caused an anæsthesia which was profound enough to permit of the introduction of a urethroscope of 7.5 in diameter.

Evidently we are on the way to the administration of the alkaloids in a colloidal state. We await further news.

P. G. UNNA.—Ciliary blepharitis, a cutaneous affection.—(*Dermatol. Wochenschr.*, 1916, No. 21.)

Lasting cures of ciliary blepharitis in the polyclinics are certainly very rare, although in the private practice of ophthalmolo-

*La Clinique Ophtalmologique, February 17.

gists the statistics of definitively cured cases are without doubt more favorable. After all blepharitis is only one step of seborrhœic eczema progressing from the hairy scalp toward the neck, face and arms; dermatologists are continually visited by individuals suffering from palpebral eczema, and among these many cases which had been treated for months in an irreproachable manner by ophthalmologists. The author thinks that these failures are due to too great a confidence in yellow oxyde of mercury ointment of Pagenstecher. This application does not penetrate to the basis of the insertions of the hair bulbs. Furthermore, many cases of ciliary blepharitis do not get well if this ointment alone is applied.

The dermatologist is forced to pay some attention to the ocular region when the eczema develops in the neighhorhood of the eye; he knows by experience which remedies are no more noxious to the eye than the yellow oxyde of mercury, as, for instance, resorcin and ichthyol in the proper doses. The author has always been successful with the following treatment:

He combines two processes trying to reach two different ends; one an extremely benign treatment of the palpebral inflammation and of the neighboring conjunctiva, and the other an active treatment which penetrates into the depth of each hair follicle. The first treatment is uninterruptedly applied by the patient, the second from time to time by the physician. It has been recognized for several years that pyrogallol oxydized by alkalis, the pyraloxin, is very well borne by the conjunctiva and has a very favorable influence on all the catarrhs of this membrane, even in cases in which the usual salts of zinc are useless. The pyraloxin is dissolved in water containing some borax and some adrenalin is added to render the treated tissues anæmic.

Pyraloxin 0.02 gr.
Borax water (3%) 10 gr.
Sol. of suprarenin 0.5 gr.
Fennel water 10 gr.

S. To be instilled several times a day. Experience having shown that compresses moistened with this mixture act equally favorably on the palpebral eczema, the author adopted the following ointment which is easier to handle:

Pyraloxin 0.1 to 5 gr.
Borax water (3%) 20 gr.
Sol. of suprarenin 1 gr.
Eucerin anhydr. ad 50 gr.

This remedy has rendered great service not only in all eczemata of the lids, but also for reducing the inflammatory symptoms of the lid margin and conjunctiva. Under its influence the scales are easily detached and then it suffices that the physician touches every other day the follicular canals which are uncovered with a small tampon moistened with silver nitrate 5 gr., water 10 gr., and spirit æther. nitros. 85 gr.

This alkoholized fluid penetrates sufficiently deep into the follicle and the silver nitrate is not reduced in this weaker solution as it is in the common alkoholic solution. (*Wochenschr. f. Ther. and Hyg.*, August, 1916.)

K. LINDNER (Clinic of Professor D. E. Fuchs).—The question of prophylaxis against postoperative infections. (*Graefe's Arch.*, 98, 3.)

In the years of 1907 to 1910, 0.3 to 0.6 per cent. of cataractous eyes were lost by infection in the clinic of Fuchs. From 1911 on Elschnig-Ulbrich's method of searching for conjunctival germs was made use of in 470 cases of cataract. In 228 the result was positive, in fact in 46 per cent. after a 24 hours culture the presence of streptococcus in the patients' conjunctival sac was shown; 156 clinically clean patients were operated on the morning of the examination, the others later. In 6 out of 470 cases an iridocyclitis developed during the healing of the wound. This affection ran a favorable course in all cases. In 3 cases there was an iritis with hypopyon and two of these lost their vision. In 3 other cases the eye was destroyed by panophthalmitis. In 4 of the 6 cases of iridocyclitis the bacterial examination before the operation has been negative: 3 had been operated on at once, the fourth on the next day. Of the other two cases with a positive result one was operated on at once as clinically clean, the other twelve days after his entry, on account of a catarrh, after the bacterial examination made 3 days before the operation had been negative. All of the three cases of iritis with hypopyon had been at once operated on when 24 hours after their entry they had had a negative result as to streptococcus. In one of these cases, at least, there was a positive result in the culture tube taken after the inflammation had made its appearance. This case healed with good light perception, in the other two the eye was lost.

In the three cases of panophthalmitis (pneumococcus infection) two had a negative result, but after 24 hours of culture a positive one. All of them were operated on at once. In one

case when the infection was already present the culture tubes were examined after five days and a positive result was had. The proportion of streptococcus infections is 1 per cent. of the patients with a continued negative result of 0.4 per cent. The author does not believe that the Elschnig-Ulbrich process is as yet sufficiently sensitive to find all the streptococcus carriers; doubtless it is probable that streptococci are habitually present in the conjunctiva suffering from senile catarrh. The negative result proves only that they are not very numerous. (*Centrlbl. f. pr. Augenhlk.*, May, 1916.)

SALUS, R.—Infection and immunity of the vitreous body.—(*Von Graefe's Arch.*, 98, 3.)

It is known that a series of germs which are non-pathogenic under ordinary circumstances can produce serious inflammations in the eye. The author believes that this proves that the laws governing the attack by and defense against invading microbes in the system do not hold good in the eye. In order to clear up this particular situation the author has begun by studying the natural protecting forces of the organism bound on the one hand to the organic fluids and on the other to the leukocytes. As far as the eye is concerned the former are of secondary importance.

The normal fluid of the anterior chamber contains little serum, the vitreous body even less and very often its presence cannot be demonstrated. But in cases of purulent inflammation the antibodies of the serum penetrate in large quantities into the vitreous body, as is shown by the author's experiments with hæmolysins. Ordinary irritations which provoke a passive hyperæmia do not suffice to provoke this phænomenon. There must be an active irritation, capable, also, of attracting the leukocytes toward the infected point. From this point bloodvessels will grow out. The leukocytes and the phagocytes constitute a very important means of defense in the antibacterial fight. The phagocytosis in itself is not an immunizing process; it receives this importance only when the leukocytes enclose some efficacious bactericidal substances capable of entering into action not only in the interior but also on the exterior of the cells (in this case they enter into the fluid which surrounds the leukocytes).

Under favorable circumstances a few hours suffice for bringing the protective substances of the leukocytes into the vitreous body. In all cases during the space of several hours the vitreous body is absolutely devoid of protection. The author asks himself fur-

ther on in what manner the intraocular process is influenced by the seat of infection, the kind of protective forces which enter into work and the rapidity with which they appear, as well as by the vital functions of the organism and those of the bacteria. His researches have shown that for several saprophytic and pathogenic germs the march of the infection was almost always the same, obedient to laws which appear unchangeable.

When a quantity of germs, not too great, is introduced into the vitreous body, the number of these germs is rapidly reduced; this is not a process of immunization because it is independent of the animal; it shows itself the same in an enucleated eye as in the vitreous body put into a test tube. The modification of the osmotic forces due to the change in the nutritive medium plays here a certain rôle. When the diminution of the germs has not gone on to their total destruction, all forms, even the least offensive, enter a stage of rapid increase. The germs do not die; they are killed by the immunizing forces. There will always result an infectious inflammation which provokes the coming on of leukocytes and serum. The result of the combat depends on the efficacy of the protective forces and the vital energy of the germs. The combat lasts longer and is fiercer with pathogenic than with saprophytic germs. With sarcinæ the diapedesis of the immunizing forces comes on relatively soon in the course of the positive phase, and since the increase of these germs is very slow a few leukocytes suffice for their total destruction. With non-pathogenic staphylococcus the combat is also quickly terminated, but not quite as quickly as with the sarcinæ. The affection due to a subtilis infection is usually the same. Thanks to the formidable increase of these germs, to the very active attraction of the immunizing bodies, to the rapid appearance of pus, the internal ocular membranes are soon destroyed and the histolytic action of the leukocytes leads to perforation. With pathogenic staphylococcus the germs rapidly present aggressive properties and then resist to the immunizing forces in the vitreous body to such a degree that the suppuration soon goes beyond the vitreous body and produces an iridocyclitis and panophthalmitis. The affection due to a streptococcus infection has the same course, only the aggressive forces show themselves quicker. The arrival of the leukocytes seems extremely slow in comparison to the enormous increase in the number of the bacteria.

Experiments with a small number of coli bacilli gave the same

results and those of an ordinary saprophytic infection. The injection of a large number of these germs was followed by a formidable increase in numbers before the immunizing forces came into play. The bacilli, which we call half-parasites, had acquired extraordinary aggressive properties. On an average sarcinæ are destroyed in two or three days, subtilis in five to six days, while very pathogenic germs continue to live a long time in large numbers among the leukocytes. It is without doubt that a portion of the postoperative infections are due to the presence of saprophytes. Especially the very mild forms of postoperative infections, which appear soon after the intervention and evolve very rapidly, must be suspected of a saprophytic ætiology. We cannot expect much from the prophylactic and therapeutic use of serums. (*Centlbl. f. pr. Aghlk.*, June 16.)

MALLWITZ.—Subconjunctival injections.—Action of subconjunctival injections of sodium chlorid solution in the intraocular complications of high myopia (*Klin. Mtsbl.*, October, 1915). The author gives a compilation of opinions concerning the effects obtained through subconjunctival injections. The effect of such injections is produced by an increase in metabolism and cellular activity in the interior of the eye; it seems that from this must result an acceleration of absorption or at least an excitation of this function. Good results will be obtained especially in chronic choroidal or retinal troubles of a bacillary or toxic nature brought about by modifications of an inflammatory origin. The best results will be observed in cases of very high myopia in the region of the posterior pole of the eye.

The author reports 28 cases of grave myopia, 22 of which were complicated with macular changes and 18 with opacities in the vitreous body; in 11 cases there was, moreover, a very marked staphyloma. Injections of physiologic chloride of sodium solutions, or of 2 per cent., gave 21 cases (75 per cent.), an appreciable improvement in vision; 5 cases (21.5 per cent.) remained unchanged, and 1 case (3.5 per cent.) showed a slight aggravation.

The author compares these results with those obtained with the older methods (sweats, mercury, iodide, Heurteloup and rest in darkness). In 16 cases treated almost exclusively with Heurteloup, there was an improvement in vision obtained in 12 cases (74.5 per cent.); 3 cases (19 per cent.) remained the same, and 1 case (0.25 per cent.) grew slightly worse.

We can from this admit that the two methods give about the

same results, but we must consider that the bleedings which constitute the mildest process among those formerly used have some very disagreeable inconveniences. We must therefore consider the subconjunctival chloride of sodium injections as a great progress which represents an efficacious and little fatiguing intervention. (*Wochenschr. f. Hyg. and Th.*, April, 1916.)

W. GENNERICH.—Treatment of tabetic atrophy of the optic nerve. (*Klin. Mtsbl. f. Aghlk.*, June, 1916.)—The author speaks especially of the erroneous opinions on the modifications of the syphilitic morbid processes of the central nervous system. He searches for their point of origin and the dependence in which they find themselves in the presence of certain anatomo-physiological conditions.

He cannot accept a great part of Behr's opinions which do not take into account the modality of the syphilitic morbid process and follow from a therapeutic standpoint an erroneous road on account of inexact premisses. The author agrees with Behr on the subject of the curability of tabetic optic nerve atrophy, but does not admit his ideas when this writer pretends that the cerebrospinal syphilis is caused by a spirochætosis of the meninges and their prolongations, and tabes and general paralysis by an infection of the brain substance itself. Behr is right in stating that the atrophy of the optic nerve begins in the periphery of this nerve. The author shows that we must admit two different points of origin for the syphilitic morbid processes: the obliterating endarteritis and the infection of the cerebrospinal fluid. The termination, whether in cerebrospinal syphilis, or in parasyphilis, depends on two factors:

1. The biological evolution of the infection in a given organism. The virus attacks the meninges through the medium of the cerebrospinal fluid. The intensity of the process is in direct relation to the intensity of the regression of the general infection and in inverse relation with the diminution of the virulence of the principal foci. The processes of organic defense against syphilitic infection are to the greatest extent dependent on the mobilization of the lymph apparatus.

A great many cases of syphilis remain for a long time in the secondary stage on account of the weak sensitiveness for the syphilitic poison. The biological form of the specific infection in a given organism is of essential importance for the road which the meningeal infection will follow.

2. In perfect accord with the histological modification we must admit that it is especially the functional perforation of the pia mater through the chronic granulation process which constitutes the basis for the parasyphilitic morbid process. As long as the cerebrospinal fluid contains spirochaetæ these follow the constant current which pushes them into the very sheath of the optic nerve. The same biologic factors which come into play for other meningeal foci can bring about their localization on the pia mater and their final development. The exactness of these premisses is shown by the therapeutic results of the endolumbar method. One endolumbar intervention alone suffices to bring about a notable improvement of recent syphilitic affections of the optic nerve, the abducens and oculomotor nerves. No other treatment is necessary. In external ophthalmoplegia and abducens paralysis the author has been able two days after an injection to see the motility return. This rapid improvement of these affections could not be explained if the cerebrospinal current did not follow the arachnoidal sheaths of the cerebral nerves. Internal ophthalmoplegia reacts very much in the same manner to the endolumbar treatment; in spite of a total inability of the pupil to contract to light, the pupillary reaction returns.

The pupils without reacting and strongly dilated are more sensitive to treatment than the very contracted pupils. Vision will be more improved in eyes with a widely dilated pupil, than in eyes with a contracted pupil. The maximal dose of the endolumbar treatment is 1 mgr. in 40 to 60 cm. of fluid.

Prophylaxis is very important; also, the adoption of a sufficiently efficacious method of treatment from the beginning of the syphilis. The interval between the first period of treatment with salvarsan and the following one should be very short (at most 5 to 6 weeks). The therapeutic endolumbar dose varies between ⅓ and 1 mgr. of salvarsan sodium with 48 hours rest in bed after the injection. In case of meningeal troubles intravenous injections of sodium chloride of 1 to 1½ liter. (*Wochenschr. f. Hyg. and Ther.*, September, 1916.)

GENDRON.—Treatment of syphilis with galyl.—(*Rev. intern. de méd. et de chir.*, January, 1917.) Conclusions. Galyl is a powerful antisyphilitic remedy. In order to cure cutaneo-mucous affections the doses need not exceed 0.30 grammes.

This dose may be repeated twice per week. In the vast majority of the cases the injection of a dose of 0.30 is well borne.

A single time (in 116) it has been followed by a violent reaction in a tabetic subject.

Injections of 0.20 and 0.15 cause no appreciable reaction. They can be repeated several days in succession and thus are very effective.

By injecting a feeble dose every day we gradually introduce into the syphilitic body a quantity of the remedy equally as large as if we made the doses weekly ones and growing.

We have been able to inject several times 0.45 (3 times 0.15); once 0.60 (4 times 0.15), and once 0.90 (6 times 0.15), in the first week of the treatment.

These daily injections of a small dose are particularly indicated in syphilitics who present a bad general condition and must not be exposed to strong reactions.

The mixed treatment with galyl and mercury is very efficacious and well borne. We have been able to inject once galyl and 3 times cyanide of mercury per week. Galyl has a happy influence on mercurial stomatitis. In the case of stomatitis it is best to substitute for a mercurial injection a weak one of galyl, which improves the affection of the mouth and permits of a quick return to the mercurial medication.

In the same dosis galyl is much more effective than neosalvarsan. It is even superior to salvarsan in anti-syphilitic power. It has, moreover, the advantage over this remedy to be much more easily handled. Galyl is therefore considerably better than the other products.

GELINSKY.—Cure of erysipelas by surrounding it with tincture of iodid.—(*Muench. Wochenbl.*, 1916.)—The author recommends the limitation by painting with tincture of iodine the whole territory invaded by the erysipelas and the covering it with a boric ointment. The best procedure is to saturate a pledget of white surgical cotton of the size of a nut with tincture of iodine. This is held at one corner by forceps, then it is gently drawn over the skin, being sure never to pass twice over the same place. Cotton made compact by torsion must not be used nor gauze tampons.

No relapses are observed when this application of tincture of iodine has been made correctly.

In this application of iodide of 10 per cent. a rapid and certainly curative topic. The morbid process going on under the epidermic cover is completely destroyed by this employment of

the iodide without any injury to the living tissue. In doubtful cases this procedure permits of a rapid differential diagnosis between erysipelas and phlegmon, because the former is cured.

SCHIEK.—Diathermy of the eye.—(*Muench. Med. Woch.*)—In the diathermy of the eye we must at once give up letting the current pass from behind forward through the skull; even when one electrode is applied to the occiptal region the current, even if strong, will pass outside around the skull. In fact, there is no tissue so resistant to the passage of the current as the bone tissue. The aim sought by Qurin to accumulate heat in the bony canals of the optic nerve cannot, therefore, be obtained. We have to renounce all hope of thus influencing the affections of the optic nerve. We must further remember that the improvement observed by Qurin concerned one case of optic nerve atrophy which had previously had a central scotoma. There was, therefore, a group of affections, in a great many of which we see improvements under all conditions.

On the advice of the technician, Dr. Bangert, of the firm of Siemens & Halske, we have chosen the method of application experimented with in the hospital of the Society of Siemensstadt. One electrode is fastened to the arm, the other to a glass receptacle filled with a physiological sodium chloride solution, like the cups for the eye baths, and applied to the surroundings of the eye; when the lids are opened the cornea is bathed in the fluid. This special ocular electrode, which we have Dr. Bucky to thank for, is very practical.

As diathermic apparatus we got the little model of Siemens & Halske. Even with one ampère one feels already after a few minutes an intense heat penetrating to the eye.

The dispositive is used to treat blood effusions and transudations in the anterior chamber. Atrophies of the optic nerve, also, are submitted to diathermy, but only to relieve them.

Since the apparatus has been in our possession and in use only for a few weeks we cannot yet give a definite opinion concerning the results obtained.—(*Wochenschr. f. Hyg. and Ther.* 1916.)

SOCIETY PROCEEDINGS.

THE AMERICAN OPHTHALMOLOGICAL SOCIETY.

Report of the Fifty-third Annual Meeting,
Held at Hot Springs, Va., May 29, 30, 1917.

By Miss L. Gay, Philadelphia, Pa.

Dr. Peter A. Callan in the Chair.

(*Concluded from July number.*)

Report of a Tumor of the Frontal Lobe of the Brain with Ocular Symptoms. Autopsy.—Dr. Arnold Knapp, New York City.

A man, thirty-six years of age, suffered from headache, slight mental disturbance, and loss of sight for six months. V. R.E.= 20/50; L.E.=2/200. The field showed a large central scotoma and slight peripheric contraction and also optic atrophy. An X-ray showed a depression of the sphenoid anterior to the anterior clinoid process and an enlargement with deformity of the pituitary fossa.

An exploratory operation was attempted in the right temporal region, but had to be abandoned on account of profuse hæmorrhage, from the effects of which the patient died three hours later.

Autopsy revealed a large circumscribed tumor growing from the dura on the superior and mesial surface of the frontal lobe (endothelioma). The optic nerves were distinctly flattened. There was a cystic distention of the floor of the third ventricle in the region of the tuber cinereum.

DISCUSSION.

Dr. G. E. deSchweinitz, Philadelphia, Pa.: I have studied three tumors of the frontal lobe, one of these cases coming to autopsy. In all the cases, the symptoms were beginning with a central scotoma. Another symptom that, taken with these ocular signs, seems very important in the diagnosis of frontal lobe lesions, the change in mentality.

Report of a Case of Total Loss of Vision in One Eye and Partial Loss in the Other Completely Relieved by a Seller Decompression Operation.—Dr. Walter R. Parker, Detroit, Mich.

A male, aged thirty-three years, had gradual loss of vision in the right eye during one year's time, until only doubtful light perception remained. There was slight diminution of the visual acuity in the left eye during three months. Vision 6/7.5. There was also a marked quadrantal defect for red and green. A diagnosis of tumor in the region of the pituitary body was made. The Seller decompression operation was performed, and complete recovery followed.

DISCUSSION.

Dr. J. A. White, Richmond, Va.: The only thing to do when you have a double choked disk and the diagnosis is obscure, with no signs of tumor and no focal signs of any kind, is to perform a decompression and relieve the intracranial pressure.

Dr. Allen Greenwood, Boston, Mass.: In the furrow wound of the skull made by high-velocity bullets, if the ophthalmologist sees these cases, he finds rapidly developing choked disk, which indicates the necessity for an immediate craniotomy or decompression. In a few days, following the operation, if things go well, the choking of the disks disappears.

Dr. G. T. deSchweinitz, Philadelphia, Pa.: The great pallor of the disks and loss of light perception in pituitary body disease and other cases does not mean that the patients will be blind permanently. They may be restored to sight by operation. We should not be too pessimistic, in view of the late period at which the case is seen. One woman was seen seven years after the beginning of her trouble, and she sees as well to-day as ever. There are two premonitory symptoms of pituitary body disease. One is the long period of blurred vision preceding the scotoma, and the other is the period of awkwardness in the use of the fingers, sometimes preceding the development of actual changes in the hands, and sometimes not.

Dr. Walter H. Parker, Detroit, Mich., closing: You can get marked scotoma to-day, and the following day there will be a marked difference in the shape, and even in the position of the scotoma. Irrespective of the color of the disk, you take the fields with different sized disks. If you have an atrophic condition, the field will be the same, no matter what size of disk you employ.

Five Years' Experience with Iridotasis.—Dr. David Harrower, Worcester, Mass.

Using Borthen's original method, twenty-three operations for chronic glaucoma have been performed, with beneficial results. The field was increased, the tension lowered, and the patient made more comfortable immediately. My original report to the Society was made in 1913; and since then, I have had several more cases, whose histories I will relate, as illustrative of the good results obtained by this method. I have not tried Borthen's recent modification of buttonholing the iris after pulling it out, because his original operation produced such good effects.

Report of Case of late Infection Following the Operation of Iridotasis for Chronic Glaucoma.—Dr. Dunbar Roy, Atlanta, Ga.

Numerous cases of late infection following the trephine operation for glaucoma have been reported. The present case is the only one on record of late infection following the operation of iridotasis. The operation was performed on the right eye of a woman, aged forty-nine years, July, 1912. A year later, iridotasis was performed on the left eye for chronic glaucoma. On January 22, 1917, the right eye was enucleated for panophthalmitis, evidently due to infection through the seat of operation. The eye was examined by Dr. Verhoeff.

DISCUSSION ON PAPERS OF DRS. HARROWER AND ROY.

Dr. C. F. Clark, Columbus, Ohio: I should like to know what Dr. Harrower's experience has been with regard to friability of the iris, and also whether he uses atropin before the operation.

Dr. Arnold Knapp, New York City: It is difficult to tell just where the iris is to be grasped and how far out it should be drawn. To circumvent that difficulty, we have preferred to make an incision into the iris tissue, so as to flatten out any folds. If we pull out the iris sufficiently to see distinctly the uveal surface on the posterior side, we have drawn out enough to keep it from drawing in again. Is it necessary to split the iris?

Dr. W. H. Wilder, Chicago, Ill.: I am still more or less of an agnostic with regard to this operation, in spite of the many good results I have had. I had a case recently, which proved to me that I am not fully acquainted with the technique. I believe that the good results in some of my cases came, not so much from the tasis feature, the stretching of the iris, as I understand

it, and therefore the enlargement of the anterior chamber, as from the fact that we did get a sinus there, which drained the fluid into the conjunctival tissue.

Dr. G. Oram Ring, Philadelphia, Pa.: I wish that Dr. Harrower would tell us the advantages of the later modification of this operation by Borthen.

Dr. David Harrower, Worcester, Mass., closing: In cases previously reported, I had trouble due to friable iris; and I tried several times to pull the iris out, and it kept breaking off. Later, I succeeded in getting the little point that pulled out into the wound without breaking. I always use atropin before the operations. The iris should be grasped as near the margin of the pupil as possible, and should be pulled into the wound far enough to make pretty sure that there is enough to hold. So far as splitting the iris, I do not know what good result that would have. It is practically the whole thing to get a good filtration bleb; because, in the case that I reported with improvement and stretching of the iris, neither the vision nor the tension improved until the bleb appeared; but when the bleb appeared, both the vision and the tension improved. I do not know what the special advantage of Borthen's modification of his original iridotasis operation is, as he has had as good results from his older method. He pulls out the iris and makes a small buttonhole there. Otherwise, the operation is the same as the original procedure.

Dr. Dunbar Roy, Atlanta, Ga., closing: I wrote to Borthen, and received a letter from him, in which he expressed an idea that he considered that all the results were due to stretching the iris and not to filtration. There is only one class that you cannot use this operation with; and that is the class composed of those people with glaucoma, in which the iris is thoroughly atrophic and degenerated, so that you cannot get the iris out except piecemeal. To get good results, a suture should be used at the center of the conjunctival flap, because it gives a good, firm attachment of the conjunctiva where the iris has been pulled out, and renders it less open to infection. I make the incision just large enough to get a small pair of iridectomy forceps in and open them just a little, so that I can catch the iris at the pupillary margin.

Glaucoma as a Result of Herpes Zoster Ophthalmicus, with Reports of Cases.—Dr. John E. Weeks, New York City.

The character of the aqueous humor's changes in all cases of congestion or inflammation of the uveal tract, from whatever

cause, is of a great deal of importance. In a case of glaucoma secondary to tuberculous uveitis, for instance, the writer obtained a decided positive test for globulin in the aqueus. Since my cases occurred in elderly individuals, in whom the anterior chamber was approximately two-thirds of its normal depth, it is probable that the lymph-space at the filtration angle was only large enough to take care of the normal outflow; although none of the patients had had any increase in tension before. When substances were added making the aqueous less diffusible, an increase in tension was produced.

The three cases were instances of monocular glaucoma. The first was one of congestive glaucoma of the subacute type, complicated by herpes corneæ. The second was a case of intermittent congestive glaucoma of moderate severity. The last was one of acute glaucoma. In all the cases, the nasal branch of the fifth nerve was involved. Operation was performed in all three cases because of the continued reduction in vision, and the persistence of other symptoms. The result was a cure in each instance.

DISCUSSION.

Dr. T. Y. Sutphen, Newark, N. J.: I had a patient with a glaucomatous condition of the eye, the anterior chamber was shallow, and the tension increased. The patient was treated with eserin and hot compresses locally, and sodium salicylate internally. Within a short time, the patient was so much improved that I determined to continue the treatment. When I saw her a few days ago, the tension was normal, vision 20/20, with correction of one diopter of hyperopia.

On Varieties of the Fatigue of Accommodation as Registered by the Ergograph.—Dr. Lucien Howe, Buffalo, N. Y.

The ciliary muscle can be made to write its story of fatigue on a revolving drum. The various fatigue curves of accommodation can be arranged in general in three principal groups. These are:

First, normal fatigue for a given age and given refraction.

Second, the strong group. (a) An abnormally strong initial contraction with normal or with abnormally slow development of fatigue. (b) An abnormally strong initial contraction with normal or with abnormally rapid development of fatigue.

Third, the weak group. (a) An abnormally weak initial contraction with normal or with abnormally slow development of fatigue. (b) An abnormally weak initial contraction with normal or with abnormally rapid development of fatigue.

Each of these types is dependent, of course, on the age of the individual and the refraction.

Examples of each of these varieties of fatigue are shown by ergograph records.

DISCUSSION.

Dr. W. B. Lancaster, Boston, Mass.: I undertook to repeat Prof. Peree's experiment, and I found that I could look at the object for one hundred seconds, or two hundred, continuously, without getting any period when I had to depress the button. The reason that I could look at it without interruption was that I could fix first one point in the object, and then another. If I kept the retina moving, fatigue did not occur.

Dr. Lucien Howe, Buffalo, N. Y., closing: There is no effort at accommodation beyond a certain point. If, however, the patients are measured accurately and we know just what certain points they accommodate for, we do get curves like that.

Sarcoma of Choroid with Secondary Changes.—Dr. Edward Jackson, Denver, Colo., and Dr. William C. Finnoff, Denver, Colo., (by invitation).

Ten years after detachment of the retina was recognized in this case, glaucomatous attacks began. There were band opacity of the cornea and nuclear cataract. Miotics relieved the attacks. Two years later, acute inflammation involved the globe and orbit. Enucleation was performed. Examination showed choroidal sarcoma with other changes, sections of which will be exhibited.

DISCUSSION.

Dr. E. C. Ellett, Memphis, Tenn.: We should view with suspicion any case of acute glaucoma that gives a history of previous blindness.

Dr. John E. Weeks, New York City: What we have here is blood-staining of the cornea, in addition to the scant infiltration of small cells. In every case in which tumor cells have entered the orbital tissue, I have made it a rule to evacuate the orbit immediately, because recurrence is so apt to take place.

Dr. T. B. Holloway, Philadelphia, Pa.: In regard to blood-staining of the cornea from intraocular causes, I should like to call attention to the discoloration that occurs about the cornea, with a clear zone at the limbus, which has been observed in the case of pseudo-sclerosis, the symptoms corresponding to multiple sclerosis, the ætiology of which is not understood.

Dr. Edward Jackson, Denver, Colo., closing: It is quite difficult to identify the microscopic appearance in the opacity, unless we suppose that the changes in Bowman's membrane and the layer beneath it in these degenerative areas belong to that syndrome of the band-like opacity.

Neuroma Embryonale of Left Lateral Ventricle of Brain with Double Choked Disc.—Dr. Robert Scott Lamb, Washington, D. C.

One of my patients, a girl, aged ten years, had a double choked disc. I made a diagnosis of brain tumor. Radiographs showed definite corrugations on the internal plate of the skull due to intracranial pressure, as does also a photograph of the interior of the calvarium. A portion of the supra-orbital plate is still attached to the brain, which will be exhibited with the majority of the tumor *in situ*. A report on the tumor is glioma, or, as Dr. Verhoeff suggests, "neuroma embryonale."

DISCUSSION.

Dr. T. B. Holloway, Philadelphia, Pa.: With reference to these so-called corrugations on the inner table of the skull, usually spoken of as digital corrugations, I hardly think they can be regarded as diagnostic of brain tumor. A characteristic X-ray, associated with cranial deformity, and exophthalmos, accompanied with divergent squint, are significant, as well as nystagmus and well-marked digital depressions.

Dr. Robert Scott Lamb, Washington, D. C.: I had a patient, who, under the administration of one-tenth of a grain of posterior pituitary and luetin tablets, one of each after meals, has come from an almost imbecile type to one of normal character. I think that we should keep in mind the fact that these corrugations may mean only a physiological internal hydrocephalus.

Recurring Neuroepithelioma.—Dr. G. Oram Ring, Philadelphia, Pa.

The patient was seen in January, 1916, for the first time and enucleation was immediately advised for a growth which had enough gross appearance of a glioma for diagnostic purposes, although a previous traumatism complicated the condition.

The parents declined operation, and the patient not having been seen for nine months returned with a history of enucleation two months before, and a notable orbital recurrence which grew

rapidly and within six weeks assumed extensive proportions. The patient was exhibited at the College of Physicians of Philadelphia, and concurrence made in the diagnosis and conceded inoperability by ordinary surgical means. The writer advised electrothermic treatment, and the case was seen in consultation by Dr. W. L. Clark, who agreed to try the method.

A growth over twenty inches in circumference was removed to the orbital rim by bipolar d'Arsonval current of 2000 to 2500 milliampères by means of a specially devised snare. A portion of the remaining orbital mass was removed by the same current by a different technic, the active electrode being a needle. Coagulation and curettement of as much of the orbital growth as was thought prudent was done.

There was active recurrence in ten days. A complete evisceration was then done, hæmorrhage being controlled by the electric method, and then cross-fire Roentgen ray treatments followed.

The recovery was uninterrupted, and there was healthy granulation in the orbit with no suggestion of recurrence at the end of six months. In April, the growth recurred, and resulted in death.

DISCUSSION.

Dr. William Zentmayer, Philadelphia, Pa.: In this case, there was no rceurrence *in situ,* at the time of metastasis in the spinal cord; and, if the treatment had been undertaken earlier, it might have prevented the formation of the metastasis in the spinal cord.

Dr. Samuel D. Risley, Philadelphia, Pa.: The salient features of the case, to me, apart from the ingenious method of removal of the growth, are the facts that there was no local recurrence and the wonderful improvement in health, after the second removal of this immense mass of pathological tissue.

Dr. John E. Weeks, New York City: In many cases of early development of intraocular growths, the anterior chamber is of normal depth. It is only after the growth has reached some considerable size, and the volume of the contents of the posterior chamber has increased materially, that we find a shallow anterior chamber. The tension of the eyeball is not always normal or increased in intraocular growths.

Dr. G. Oram Ring, Philadelphia, Pa., closing: My paper does not dogmatically assert that the anterior chamber is shallow in these cases, but merely suggested it. So far as the tension is concerned, it was stated in the paper that the tension is sometimes normal, sometimes minus, and sometimes plus.

A case of Cavernous Angioma of Orbit.—Dr. Burton Chance, Philadelphia, Pa.

The tumor involved the upper lid and globe. From protrusion it had eroded the superior orbital border and the outer wall. The superior and the external recti muscles were compromised. When the patient became excited, and when she stooped, a mass protruded forward through the fissure. Photographs and radiographs were exhibited. The mass was removed by dissection, and operations were devised to reduce ptosis and effect parallelism.

DISCUSSION.

Dr. C. F. Clark, Columbus, Ohio: A tumor of the vascular tissue of the apex of the orbit, producing marked protrusion, occurred in a child two and a half years old. Pressure bandages and other treatment were tried, but no impression could be made on the condition. The protrusion finally became so marked, that I determined to operate by making an incision at the outer canthus and dividing the external rectus and make an inspection of the tissues at the apex of the orbit. The tissues could be seen enclosing a peculiar mass, presenting the appearance of worms in a coiled bunch. There was no pulsation. I employed a little tube of radium and embedded the end of it deep in the tissue and closed the wound, leaving the tube there for two hours and a half. After removal of it, I sutured the tendon again. The result was remarkable. After the reaction had passed, the growth shrank and disappeared.

Dr. William Zentmayer, Philadelphia, Pa.: These cases have been shown to be due to the presence of either varix or angioma and the difference between the kind that Dr. Chance has reported and the ordinary intermittent pulsating exophthalmos is merely the location of the mass. In the intermittent form, the mass is behind the globe; whereas, in Dr. Chance's case, it was above. I think that dehiscences in the bone may be due to a developmental deficiency, because in Dr. Chance's case there was some absence of bone in the temporal region, not directly connected with the mass in the orbit.

A Case of Aneurysm of the Internal Carotid Artery (Intracranial Portion) and its Effect upon the Patient's Vision.—Dr. John R. Shannon, New York City, N. Y.

One of my patients, a woman, aged fifty-two years, noticed a blurring of vision of the right eye. Examination showed a cen-

tral scotoma. All laboratory tests of the teeth, sinuses, etc., proved negative. There were no other symptoms. There was progressive atrophy of the optic nerve, with gradual involvement of the field of the left eye. Neurologic examination suggested a growth at the base. A decompression was performed, but no growth could be found. The patient died from bursting of an aneurysm of the internal carotid artery, as the autopsy showed.

Trypanosomiasis Keratitis, Being an Experiment Inquiry.—By G. E. de Schweinitz, M.D., Philadelphia, and Alan C. Woods, M.D., Philadelphia (by invitation).

This paper concerned itself with a review of the literature, with the ocular symptoms, and with the types and clinical course of the lesions, with the experimental technique, with the microscopic pathology of the affected tissues, and with the therapeutic effects of the administration of salvarsan. The *trypanosoma equiperdum* was used in the experiments. The ocular lesions usually appear in the form of dense clouding of the cornea and iritis, and are not caused by a general infection, but are synchronous with an actual invasion of the ocular humors by the trypanosomes. They may be found in the substantia propria of the cornea, which shows lesions similar to those seen in interstitial keratitis, occasionally in the serofibrinous exudation covering the ciliary processes, and in focal retinal lesions which are characterized by a mononuclear cellular infiltration. The ocular lesions are dissipated by salvarsan given intravenously.

Quantitative Perimetry; Practical Devices.—By Clifford B. Walker, M.D., Boston.

Introductory: Our problem has been to increase the speed of making a complete examination of the field and still maintain the greatest possible accuracy. This has led to the construction of several pieces of apparatus and a new chart, as well as a systematic method of procedure in taking the field and making the record. It has further led to a careful study of possible errors and their correction in screen work.

I. Factors distracting memory of readings necessary to make rapid records. These are discussed under the following heads: 1, Mechanical and technical; 2, orientation difficulties; 3, uncertainty as to accuracy; 4, difficulty in recording. II. Screen test. General consideration of requirements, materials and diffi-

culties leading to a more detailed discussion of III. Visual angles: 1, as obtained by formula and slide rule; 2, as obtained from a specially devised plot; 3, the relation of the visual angle to the size of the field; 4, the use of this data in constructing more accurate apparatus. IV. The construction and marking of a section of a sphere of 1000 mm. radius. V. A new combination screen very accurate for distances ranging from 1500 mm. to 2500 mm. VI. A careful study of all the errors that may complicate the use of small disc and screens. VII. The construction of the new chart designed to meet our requirements.

Conclusions concerning the accuracy, value, control of errors, and methods of making records in quantitative perimetry.

Asteroid Hyalitis.—Dr. T. B. Holloway, Philadelphia, Pa.

I am going to report on four of my patients, two males and two females, all over fifty years of age, with white globular opacities in the vitreus, conforming to the clinical picture described by Benson, as asteroid hyalitis. They all show some intraocular changes. In three of the four patients, the characteristic vitreous changes were unilateral.

Report of a Case of Primary Sarcoma of the Iris with Remarks.—Dr. George Huston Bell, New York City, N. Y.

This case presents an unusually rare form of primary tumor-growth. It is traumatic in origin in all probability, and essentially, a malignant disease. Iridectomy should be done only as an aid to diagnosis. The radical operation is by far the safest in the end.

Bilateral Inferior Hemianopsia.—Dr. Henry Tyson, New York City, N. Y.

I had a case of chronic interstitial nephritis, with marked neuroretinitis albuminurica, blindness lasting fourteen days, followed by a return of vision in the R.E. to 20/40; and in the L.E. to 20/30, with bilateral inferior hemianopsia lasting nine years.

Case Reports with Comments.—Dr. Robert Sattler, Cincinnati, Ohio.

One of my patients developed tetanus following within three days a penetrating wound of the globe; the entrance opening was confined to the cornea, and was produced by a long, punch-shaped arrow of desiccated horseweed, aimlessly shot from

crossbow. Eight hours after the injury, the patient entered the hospital, and in twenty-four hours, the globe was enucleated. On the evening of the third day, the patient developed tetanus. In spite of prompt intravenous, intraspinal, and intraorbital injections of antitetanic serum, the patient died on the seventh day after being admitted to the hospital. Autopsy was performed.

In another patient, a lad aged fourteen years, of robust physique, and without a history of trauma or sinus disease, there was a sudden and excessive unilateral proptosis with imminent ulceration of the cornea and uncontrollable discomfort. There was probably a sudden, spontaneous activity of an intraorbital neoplasm which for two years had only resulted in a minimum, and for a long time, hardly perceptible prominence or displacement of the globe. Immediate exploratory operation of the globe was proposed, and carried out with sanction on the part of the parents, to proceed with radical surgery after the Kroenlein or Czermak methods; and if possible, preserve the globe. With a large Kroenlein opening incision, no sign of a tumor either in the floor or roof or lateral walls or within the funnel of the recti muscles or of the optic nerve could be discovered, but at the extreme apex of the orbit, a smooth, button-like prominence was found on the inner wall. This suggested the presence of an exotosis or osteoma which had forced its passage from an adjacent (ethmoid) pneumatic cavity and was slowly obstructing the lumen in the extreme apex of the orbital cavity.

A Note on the Relation of Sex Linkage to Certain Hereditary Diseases of the Eyes.—Dr. Lucien Howe, Buffalo, N. Y.

A great many of us are extremely ignorant of heredity as a factor in diseases of the eyes. Geneticists, however, find that malformations of the eyes are transmitted according to the Mendelian law. There are exceptions concerning transmission in the male or female line. I will give a number of demonstrations of deformed eyes of a fruit fly (drosophila) which I obtained by experiment. Color-blindness may be given as an example of sex linkage.

The following officers were elected for the ensuing year:

Dr. W. H. Wilder, Chicago, Ill., President; Dr. Lucien Howe, Buffalo, N. Y., Vice-President; Dr. Wm. M. Sweet, Philadephia, Pa., Secretary and Treasurer.

ABSTRACTS FROM MEDICAL LITERATURE.

By W. F. Hardy, M.D.,

ST. LOUIS, MO.

GLAUCOMA; A CRITICAL SURVEY OF PRESENT METHODS OF TREATMENT.

Barkan, of San Francisco (*Cal. State Med. Jour.*, July, 1917), states that present methods can be divided in three classes: a well defined medical treatment, miotics; a well defined surgical one, viz., the classical iridectomy of Von Graefe; an ill defined surgical one, viz., the production of a permanent filtering fistula. Miotic treatment has its limitations and should be confined to careful patients who can be kept under constant observation. It is probably wise to rely on miotics in one-eyed, aged, atheromatous individuals. Iridectomy is of little value in glaucoma simplex; in the latter conditions the value of the newer operative procedures remains to be proven. Barkan takes a rather gloomy view of operative treatment except in the acute inflammatory attacks promptly operated upon, yet that all glaucomas except the simplex type should be operated upon. Miotics are useful in the after treatment provided the pupil reacts to them. In glaucoma simplex opinion is divided as to treatment; some using miotics, others operate. Graefe's iridectomy has in this type been virtually given up. Men of the greatest experience are relying on miotics in simple glaucoma. Recent literature shows a tendency to a reversion to the use of Von Graefe's iridectomy, especially in acute attacks. The drift seems to be away from the Elliot and similar operations; this appears to be due to the fear of late infections. Filtering operations are principally advocated for subacute and chronic glaucoma. Barkan feels that if the pupil does not respond to miotics, even though apparently good subconjunctival drainage is going on, that that eye is doomed. He thinks that relief of tension is not all in the cure of glaucoma; there are other degenerative factors involved, possibly nutritional, possibly nervous, entirely apart from the tension. Schnabel is quoted, "anything, anywhere, anyhow in the anterior chamber," will cure some cases; but the reverse is also true that "anything, anywhere, anyhow" in the anterior chamber will not cure other cases. The filtering operations, viz.: Elliot's, La Grange's, and Herbert's, are discussed. These op-

erations should be judged by their results in white civilized peoples. The reports are good apart from the late infections and how often these will occur one cannot state. The author concludes by submitting a table of therapeutic preferences, viz.: (1) In the one-eyed, no fistulating operation unless all other methods fail. (2) In acute inflammatory attacks, such reduction as is possible by miotics, followed by iridectomy; this if technically very difficult preceded by posterior sclerotomy. (3) In chronic subacute glaucoma, iridectomy or Elliot: the former should the eye be in relatively good condition, the latter should it not be. (4) In glaucoma simplex miotics while in statu quo. Elliot if it fails.

A NON-SUTURE OCULAR TENDON SHORTENING WITH RESULTS OF FORTY OPERATIONS.

O'Connor, of Oakland, described his operation for squint in the *Ophthalmic Record*, December, 1914, and demonstrated the essential points of his technic at the Detroit meeting of the American Medical Association. His short article in the *California State Journal of Medicine*, July, 1917, deals chiefly with results he has obtained in operations upon the various recti muscles. His chief desire in working up this method was to avoid tenotomies, especially of the interni. The cases reviewed include shortening of externi for concomitant esotropia and esophoria, shortening of externi for paresis of that muscle, shortening of paretic interni to correct exotropia due to the paresis, shortening of interni to correct concomitant exotropia in degrees varying from 9 to 55 degrees of arc, shortening of interni to correct insufficiency of convergence, shortening of a superior rectus to correct a paresis of 30 years standing, and shortening of an inferior rectus for a 19 prism degree concomitant hyperphoria. His results appear remarkably good. The difficulties of the operation are more apparent than real. One of the greatest advantages of the operation, is that squint cases may be operated on at any age, consequently in young children it may be done, allowing binocular stereoscopic vision to be developed in a normal way and amblyopia exanopsia be prevented. Two of O'Connor's operations were in children of three years of age. He is averse to waiting and operating as "a last resort", and sees no reason for allowing so many cases to suffer for years from headaches and

other reflex symptoms of eyestrain when the cause can be easily and safely removed. A comparison is made between the present handling of muscle cases by the average oculist and the older methods of handling intranasal cases—that is, largely temporizing in character. The thought is expressed that extraocular muscle work will before long become chiefly operative and that such temporizing procedures as prism use, prism exercises and similar methods will be given up.

MONOCULAR BLINDNESS FOLLOWING DIFFUSED VIOLENCE TO THE SKULL; ITS CAUSATION AND TREATMENT.

Under the above title J. Hogarth Pringle, of Glasgow, in the *British Journal of Surgery*, January, 1917, gives a very interesting discussion of traumatic monocular blindness, with findings in 46 post-mortem examinations of his cases having injuries near the foramen opticum.

The article begins with a brief review of the different current ideas as to the cause of this kind of blindness. The author thinks that because in a very large number of these cases the traumatism is very slight, frequently the patient not being rendered unconscious by it, perhaps led to the old idea that the loss of vision was the result of reflex action through the fifth nerve (Beers). Later the explanation offered was that it was due to "concussion" of the optic nerve. Later still, and apparently the theory most generally accepted at the present time, is that the blindness is caused by injury to the nerve in the way of crushing, or tearing of its fibres at the foramen opticum, in consequence of fractures involving the foramen. Berlin associated with Holder in originating this latter idea, stated that the usual site of the injury to the skull, which resulted in monocular blindness, was the frontal bone, and especially the orbital ridges, but that occasionally the root of the nose, the malar bone, the temporal, or the occiptal region was the recipient of the force; the violence from those regions being radiated to the optic foramen. Other supporters of this view have been Callan, Rawlings and Würdemann.

The author states that in the Glasgow Royal Infirmary there have been under his charge 300 cases of undoubted skull-fracture, and of the 140 patients who recovered, only one complained of

loss of vision after the accident, in which case the blindness affected one eye.

From the findings in 136 post-mortem examinations made in these cases of fracture of the skull the author is able to say that fractures involving the optic foramen have been uncommon, and that evidence of direct injury to the optic nerve has not been found in any of his cases. From this experience it appears much more probable that the blindness is the result of compression of the nerve due to hæmorrhage into its sheath—intravaginal hæmorrhage. This hæmorrhage may be associated with a fissure of the optic foramen, or with a fracture of the orbital roof, or with both, but it may occur independently of either and independently of fracture in any part of the skull. This latter statement he finds proof for in several of the cases he designates, and he assumes therefore that an intravaginal hæmorrhage might result from violence applied to the head without a fracture being produced in any region of the skull whatever.

Putting aside those cases due to penetration of a foreign body, which may cause direct injury to the optic nerve, the cases, in which monocular blindness arises after diffused violence has been applied to the skull, must be due to injuries of the nerve by bone fragments, or to laceration of the nerve by traction (an extremely rare occurrence), or to an intravaginal hæmorrhage.

The question as to what is the cause of blindness is one of great practical importance from the point of view of treatment, for although some patients appear to have partially recovered their vision after the lapse of time, it is evident from the reports of cases that in a large number the loss of vision has been considerable and permanent; in many it has been complete, the patients not having even perception of light in the eye affected. If the amaurosis be the result of bone fragments causing compression of the optic nerve at or near the foramen, it is very doubtful if they could be elevated and the compression relieved, and it is still more improbable that laceration of the nerve could be repaired; but if the blindness be due, as the author believes it is usually, to an intravaginal hæmorrhage, there is a possibility that the vision would be improved to some extent if not completely, provided the blood could be evacuated at an early stage.

The author concludes from his study of the pupil in monocular blindness that the main point seems to be the absence of its reaction to direct light and the preservation of the consensual reaction.

None of the patients in the author's series were conscious during the time they were under observation so that no evidence was forthcoming as to whether any interference with their visual acuity had taken place or not. No ophthalmoscopic changes were discovered in the few patients in whom it was possible to make an examination.

In conclusion, Pringle urges that these cases of monocular blindness, when seen very early, should be given the benefit of the doubt, and that the optic nerve of the affected eye should be exposed at the earliest possible moment after the blindness is discovered, and any blood found it its sheath evacuated.

AN OCULO-PALPEBRAL PROTHESIS.

The necessity for providing a cosmetic disguise after extensive injury to the eye and orbit, does not frequently arise. However, the advent of war may bring about that necessity due to the frequent disfiguring wounds involving the loss of an eye and its lids in which case the ordinary glass eye is out of the question. Ramsay, of Glasgow (*The Lancet,* May 12, 1917), has had some very satisfactory results with an oculo-palpebral prothesis. The artistic and æsthetic value is mentioned. The betterment of the patient's condition from an economic standpoint is illustrated. The procedure is old. Ambrose Paré described such a prothesis. In the 16th century it was even known. Ramsay has endeavored to improve on the older models. The spectacles only need to be lifted to reveal the astonishing change in appearance when the ecblepharon is removed. Ramsay says the aid of art ought never to be called in until the resources of plastic surgery have been exhausted. Each prothesis must be made to suit the individual case. Many materials have been tried. Ramsay uses vulcanite which had been suggested by Coulomb and Ruppe. It can be moulded with ease and painted to harmonize with the surrounding parts of the face. The parts to be replaced are modelled in wax, from which a plaster paris impression is taken. The soft rubber is then moulded on the plaster of paris and thoroughly vulcanized. The artificial eye is cemented to the vulcanite lids after these have been colored to match the surrounding parts; the prothesis is attached to a spectacle frame. The lens in front of the sound eye corrects any error of refraction, while that in front of the artificial eye is of the curvature which is found to

give the best cosmetic result. Photographs of four patients are reproduced showing the before and after effects of the prothesis. The most serious drawback to the prothesis is its immobility. It is important that all cicatricial contraction is as far as possible completed before the ecblepharon is adjusted, for if any further shrinking occurs a readjustment of the prothesis is necessary.

THE RETINITIS OF ATERIOSCLEROSIS, AND ITS RELATION TO RENAL RETINITIS AND TO CEREBRAL VASCULAR DISEASE.

R. Foster Moore (*The Quarterly Jour. of Med.* Vol. X, Nos. 37 and 38), in a lengthy article which does not well lend itself to abstraction, because of tabulations and classifications, discusses the retinitis of arteriosclerois which he takes to be a separate clinical entity distinct from renal retinitis. His investigations were carried out with three main objects in view: (1) To define, as accurately as possible, those changes in the retina and its vessels which are indicative of arterio-sclerosis; to apportion to these changes their relative importance; and to follow their development and course over considerable periods of time. (2) To establish the fact that a condition of retinitis may be engrafted on retinal arteriosclerosis; that this condition has distinctive characters; and that in its course and prognostic significance it differs markedly from renal retinitis and calls for separate recognition. (3) The consideration in detail of the extent to which disease of the retinal vessels is an indication of similar disease of the cerebral vessels. As evidence for the differentiation of arteriosclerotic retinitis as a clinical entity, the following ophthalmoscopic appearances are submitted: (1) The sclerosis of the retinal arteries is always a precursor to the development of the exudates and consequently evidence of this is always well marked. In renal retinitis vascular disease is usually present; it is, however, less marked and the evidences of it are apt to be marked by the other manifestations of retinitis. (2) Retinal hæmorrhages tend to be smaller and more scattered than in renal retinitis. (3) The retinal exudates which have been described are to some extent distinctive in appearance and arrangement. (4) Patches of soft edged exudate (wooly patches, cotton wool patches, snowbank or cumulus cloud exudate) are rare in arteriosclerotic retinitis, and when they occur are prob-

ably evidence of beginning renal insufficiency. (5) General œdema does not occur, and consequently retinal detachment is rarely, if ever, produced. (6) The star figure may be present in either case. It is to be remembered that the arrangement of exudate in the retina in the form of a complete or partial star figure, is dependent upon an anatomical basis, and consequently is of no distinctive value. Thus it may be seen in such widely differing diseases as papillœdema, thrombosis of the central retinal vein, diabetic retinitis, etc. The distinctive features concern the appearances of the exudate which compose the star figure. In arteriosclerotic retinitis it is composed of the small dots already described. In renal retinitis the dots are larger and more elongated in the line of the ray of the star; they are less discrete from the first, and tend to coalesce to form ragged and irregular rods. Ophthalmoscopic evidence of œdema is usually present, and, as the disease progresses, the star arrangement is often obscured as a result of coalescence and conglomeration of the exudate. (7) It has been already stated that in 45 per cent. of the 31 patients the retinitis was unilateral. Renal retinitis may be evident in one eye before the other, but it seldom remains unilateral for more than a few days or weeks.

Moore believes, then, for the following reasons, that there is a form of retinitis which is associated with severe general arteriosclerosis; that it is caused by the local retinal vascular disease; and that its association with disease of the kidney is only incidental; that the retinitis is in large measure distinct from renal retinitis in its ophthalmoscopic character, in its significance, and in its prognostic value. (1) It is always associated with severe general arteriosclerosis and retinal vascular disease. (2) Its gradual evolution from a condition of retinal arteriosclerosis can be traced. (3) The ophthalmoscopic appearances are in large measure distinctive; it is frequently unilateral, and cotton-wool patches never occur. (4) The tenure of life of the subjects of this condition is very uncertain, but they often live a number of years. (5) The cause of death is referable to disease of the vascular system and not to disease of the kidney. Moore suggests that this form of retinitis calls for separate recognition.

Summary.—The evidence, then, as to the relation between the condition of the retinal arteries and that of the arteries of the brain would appear to be both striking and conclusive, for: (1) Of 44 patients suffering from a gross cerebral vascular lesion 31 (70 per cent.) exhibited evidence of retinal vascular disease, and

in 19 of them (43 per cent.) it was severe in degree. (2) Of the patients in tables A and B (patients in whom retinal arteriosclerosis alone was present and patients in whom retinal exudates were present in addition to retinal arteriosclerosis) 27 are known to have died and the cause of death has been ascertained in 26 instances. Of these 26 cases a gross vascular lesion has been the cause of death in 12 (46 per cent.). (3) Of the patients in tables A and B, i.e., patients in whom retinal vascular disease was sufficiently severe to give rise to symptoms, there are 46 in whom there is satisfactory information as to the development or otherwise of gross cerebral lesions. Of these 46 patients, 21 (46 per cent.) had either suffered from such a lesion or developed one in the course of about 3 years, and as 18 of the remainder known to be still alive there can be no doubt that the above proportion will be added to as time proceeds.

Moore's article is well illustrated, carefully gotten up and is deserving of an attentive reading.

ON DISORDERS OF THE PUPIL IN DEMENTIA PRAECOX.

The following abstract of an article under the above title, by Freda Reichmann, appearing in the *Archiv. für Psychiat.*, is taken from the *Psychiatric Bulletin* of January, 1917: "Among the different disorders in the pupils in dementia praecox should be mentioned: (1) The fact that Bumke found in 60 per cent. of cases of dementia praecox, absence of the psychoreflex (dilatation of the pupils associated with mental activity, mental effort, effects, etc.), and of the reflex enlargement due to sensory stimuli. This finding has, on the whole, been confirmed, in the sense that these reactions are not infrequently absent in dementia praecox. (2) In 1907 Westphal described in a catatonic stupor, a distortion of the pupil into transverse oval shape, with, at the same time, diminution of the light reaction. This condition was transient and seemed to go hand in hand with the degree of tension in the body musculature. Later, finding it frequently in catatonic stupor, he designated it as catatonic stiffness of the pupil. He defined it as a transient loss of the light or accommmodation reflex, associated, as a rule, with changes in the shape of a pupil. Later an assistant of Westphal confirmed all this. Weiler found frequently diminished reaction in dilated

pupils. Albrand found the change reported by Westphal also in catatonic excitement. (3) E. Meyer found in 7 cases of dementia praecox that pressure on ovarian points caused dilatation of the pupil which then did not react to light. Twice they took on an oval form. (4) Other changes of the pupils in dementia praecox are the following: The author found 61 cases with unusually large, 31 cases with especially small pupils; in 47 cases they were not round; in 8 cases hippus was seen; in 30 cases they were unequal, and in 17 cases eccentric. It is interesting to compare her normal findings with these. She found 20 cases with unusually large pupils; 14 with unsually small; 15 in which they were not round; 19 with inequality, and 11 cases in which the pupils were eccentric.

A CASE OF IRITIS AND OPTIC NEURITIS FOLLOWING TONSILLITIS.

Sabotky, of Boston (*Boston Med. and Surg. Jour,* June 7, 1917), mentions the various exciting causes of iritis and the now generally accepted theory of focal infections. In optic neuritis as in iritis an infective agent in the blood is the usual cause of the condition. If the infective focus is found in these cases and eliminated, a brilliant result can be achieved. The author reports a case in which both iritis and optic neuritis developed after an attack of tonsillitis and in which a tonsillectomy resulted in an apparent cure. The patient was carefully gone over, Wassermann made, teeth examined and accessory sinuses investigated. The latter were found normal. A follicular tonsillitis with enlarged and tender cervical glands was present. Examination of spinal fluid was made. The tonsillitis was looked upon as the ætiological cause of the bilateral iritis and optic neuritis. The tonsils were enucleated and gradual recovery supervened with a return of the discs to normal.

SUBCONJUNCTIVAL INJECTIONS OF SALVARSANIZED SERUM IN THE MANAGEMENT OF OCULAR SYPHILIS.

Lamb, of Washington (*Am. Jour. of Syphilis,* January, 1917), from the satisfactory results obtained with subconjunctival injections of salt solution was led to the use of salvarsanized

serum subconjunctivally. He found his results quite satisfactory. After further experience he again recommends its use. The diseases promising the best results in its use are iritis, iridocyclitis, keratoiritis, interstitial keratitis. The directions for the preparation of the salvarsanized serum are as follows: "A dose of salvarsan or allied material is given intravenously in the usual manner. At the end of an hour 50 or 60 or even 100 cc. of the patient's blood are drawn by means of venous puncture; clear serum thus separated, allowed to stand an hour, then centrifugalized, diluted to 40 per cent. with normal salt solution, heated to 56 degrees C. for half an hour; then either hermetically sealed in ampules or kept cool until the following day, when it is put in ampules, capacity 1 cc., and kept on ice a reasonable length of time, to be used whenever needed."